

CWO 48
SUBSYSTEM INTERFACE VERIFIER
SOFTWARE REQUIREMENTS DOCUMENT
FOR THE
DEEP SPACE NETWORK DATA SYSTEMS
SOFTWARE DEVELOPMENT PROGRAM

DSN-DOI-SIV-0-0-RDDX/1.1.2

June 9, 1994

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INTRODUCTION

1.1 Identification

Program Set Name:	Subsystem Interface Verifier
Identification Number:	DOI-5249-OP
Version Number:	OP-A
Release Number:	1.1.2
Pseudonym:	SIV
Project:	Deep Space Network, SPC Upgrade Task
Subsystem:	DOI
Assembly:	Subsystem Interface Verifier (SIV)

1.2 Overview

The Deep Space Network (DSN) provides worldwide continuous realtime coverage of spacecraft activities to numerous users. DSN's requirement to provide its customers with almost 100% of reliable data is a continuous challenge. On its path to the end user, the raw data is processed through multiple subsystems whose interfaces are governed by written specifications. Uniform adherence to these interface agreements is crucial as even minimal data loss can threaten DSN's data delivery requirement.

On-going software changes to support new requirements compete for resources and must be reliably verified before they are used for project support. On the average, a DSN assembly has six external software interfaces. Complete verification of these interfaces requires support by the projects and DSN development personnel. Testing of the interfaces is prone to error, frequently resulting in the need to re-build and re-test the software. This is an inefficient and costly use of valuable project and DSN resources.

The Subsystem Interface Verifier (SIV) will provide a means to simulate and test subsystem interfaces as defined in DSN interface agreements (820-16 and 820-13). Such interfaces will initially be limited to those defined for data transmissions on the DSNC SPC LAN using the DSN standard 890-131 (DFL-1-2) and DSN Network Data Flow Standard (DFL-1-1) protocols.

The SIV will be used to create bit-level interface data, essentially prototyping an interfacing subsystem without the expense of creating special simulation code for that subsystem. It will be used to receive data from a subsystem, dump it in a readable format, and validate the contents. This will allow interface testing to be performed and errors corrected as soon as interface agreements reach Level 3. Benefits of the SIV include early discovery of interface problems, decreased cost and complexity of interface testing, and improved schedule performance.

The SIV will be developed and delivered in successive builds and initiated with a prototyping effort. Customer demonstrations will be held to demonstrate functionality of the SIV prior to delivery of each build. Each build will focus on one or more subsystems currently under development which would best benefit from use of the SIV in the corresponding time frame.

1.3 Document Scope

This document identifies detailed characteristics of the SIV program set being released. It is composed of the following sections:

Section 1 contains an introduction and overview description of the program set.

Section 2 defines the environment in which the software must operate and contains the list of latest versions of all related program set documents.

Section 3 contains the description of all new or changed capabilities that have been incorporated into this release.

Section 4 contains the detailed contents of the software delivery including the list of operational files that comprise the program set, the list of files that were delivered for this release, and the list of test files for this release.

Section 5 presents the list of problems that have been corrected in this release, as well as the list of outstanding problems.

Section 6 presents the detailed instructions required to build the software.

1.4 Method

Various portions of this document were generated using the reporting features of the Telos Configuration Management tools - Oracle and CCC. These tools provide accurate accounting of the status of the software under development and test, as well as the contents of the configurations that are delivered to JPL.

1.5 Notation

The notation used in this document should be self-evident.

1.6 Controlling Documents

D-4007

JPL Software Management Standards Package; Software Implementation and Test Phase; Version 3.0; December, 1988.

1.7 Applicable Documents

None

RELEASE ENVIRONMENT

This section describes the environment in which the program set will operate. A list of the current versions of all related documents is provided.

2.1 Environment

Target Platforms: Modcomp 9735 REAL/IX (68k)
Sun SPARC 10 Workstation

Operating System: REAL/IX B.1
Solaris 2.3

Compiler: GCC Compiler B.3 (Modcomp)
CC SPARCompiler 3.0 (Sun)

Multi-User Software Release: DOI-5555-OP-A/1.4.7

NOTE: MSW must be built ANSI using the B.3 compiler on the 68k Modcomp, and must be built using the 3.0 compiler on the SUN.

SYSGEN Tunable Parameters: The tunable parameters that must be modified for the "standard" system configuration to run SIV are platform specific and are listed below.

Platform Specific Sysgen Parameter values for use of SIV (including MSW):

Sysgen Parameter Description	Realix		Sun	
	Param	Value	Param	Value
Maximum Shared Memory Segment Size	SHMMAX	(4096*1024)	shminfo_shmmax	4000000
Maximum # of Shared Mem IDs in Kernel	SHMMNI	60	shminfo_shmmni	600
Maximum # of Shared Memory Segments	SHMSEG	15	shminfo_shmseg	30
Maximum # of Binary Sems in System	BSCNTSYS	300	Not applicable	
Maximum # of Binary Sems per process	BSCNTPRC	32	Not applicable	
Maximum # of Tasks Using Binary Sem	BSMAXPRC	80	Not applicable	
Maximum # of Semaphores Per ID	SEMMSL	25	seminfo_semmsl	100
# of Semaphore ID's in the Kernel	SEMMNI	20	seminfo_semmni	200
# of Semaphores in the System	SEMMNS	40	seminfo_semmns	400
Size of Semaphore Set Control Map	SEMMAP	10	seminfo_semmap	40

"Note: Sun machines do not use "binary" semaphores.

2.2 Documentation

The following lists the latest version of all program set documentation that is compatible with this release:

SRD-DOI-5249-TP Subsystem Interface Verifier (SIV) Software Requirements Document (SRD); Rev. A, Draft; January 25, 1994

SSD-DOI-5249-TP Subsystem Interface Verifier (SIV) Software Specification Document (SSD); Rev. A; TBD

SOM-DOI-5249-TP Subsystem Interface Verifier (SIV) Software Operating Manual/User's Guide (SOM/UG); Rev. A, Draft; June 10, 1994

NEW OR CHANGED CAPABILITIES

The following summarizes the capabilities implemented in SIV TP-A, Build 1:

NETWORK COMMUNICATIONS

(SRD, Section 1.9.1)

Provides Ethernet Connection to subsystem under test via the SPC LAN or equivalent LAN.

Supports Standard DSCC local facility protocol (890-131).

DATA BLOCK GENERATION

(SRD, Section 1.9.2)

Creates data blocks according to the formats and values described in the Rapid Interface Definition File (RID). RIDs reflect information taken from DSN Detailed Subsystem Interface Agreement documents (820-13 and 820-16).

Provides a means to generate interface data blocks such that data in each field assumes values that span the valid range specified in the interface agreement.

Provides a means to generate data that is outside the valid range specified in the interface agreement for each field.

Automates the generation of interface data blocks.

Sends interface data blocks to the subsystem under test.

Rates of sending interface data blocks shall be within the rate ranges specified in the interface agreement.

Generates interface data blocks for multiple interfaces of one subsystem concurrently.

Generates raw data blocks from an ASCII data file. Allows for dynamic selection of data file to use.

DATA RECEPTION & VALIDATION

(SRD, Section 1.9.3)

Receives interface data blocks of 890-131 format as sent from the subsystem under test.

Performs validation on received data blocks as necessary to decode data block to the formats and values described in the interface agreement RID.

Receives interface data blocks for multiple interfaces of one subsystem concurrently.

Prints validation results in readable ASCII report format (printable disk file).

Prints report of testing performed (autocontrol test script run log).

MONITOR AND CONTROL

(SRD, Section 1.9.4)

Controls the subsystem under test: i.e., monitor/control by DMC shall not be required for testing. Specifically, provides for FAT transfer, CCN transfer, OD forwarding, EN reception, and OD response reception.

Allows user to control testing or select displays via directives (according to 890-132 standard).

Creates a readable dump of blocks input or output to/from the subsystem under test (as requested by MID).

Provides means to control testing: i.e., start, stop, configure, change level of reporting.

Captures responses from subsystem under test (event notices) and integrates them in SIV's event message log (tagged by subsystem DDC).

Provides means to modify interface data dynamically during testing.

Provides status information regarding SIV configuration, data generation, and data reception. Data flow statistics include block size, count, rate, and direction.

Provides a facility to repeat test steps under automatic control (via autocontrol test scripts).

Provides user with ability to specify configuration, RID, and test files to operate from.

Provides for dynamic visibility into data block contents.

OTHER MISCELLANEOUS

(SRD, Section 1.9.5)

SIV is ported to the following host platforms: MODCOMP 9735 under REAL/IX; SUN Sparc 10 Workstations under Solaris 2.3.

DETAILED CONTENTS

This section defines the elements that comprise the program set and identifies the files that have been released for this delivery. It provides a complete listing of all elements, both operational files and test files.

4.1 Complete Detailed Contents

Directory Name: build - build, migrate, etc. make files

Files:

riv.mak	rivenv.inc
---------	------------

Directory Name: csen - event notification task (SIV portion)

Files:

csen.mak	riv_en.c
----------	----------

Directory Name: data - MSW and SIV data files. Includes: shm initialization value files, monitor data definition file, task initialization definition files, operator directive definition file, display definition files, debug definition files, on-line SOM files, etc.

Files:

align.raw	oneword.raw
cnf.dfs	opdirs.siv
debug.dat	rividsp.dat
enhelp.txt	short.raw
files.dat	sysinit.rx
hdir.txt	sysinit.sn
mdspecs.dat	term.dat
nsshdr.raw	tlm3204.raw
oneblock.raw	

Directory Name: data.cnfdir - SIV configuration data files

Files:

acg.cnf	scp.cnf
bvr.cnf	test.cnf
dgt.cnf	ugc.cnf
mpa.cnf	

Directory Name: data.dbgdir - SIV debug control files

Files:

ridctl.ddx

Directory Name: data.dspdir - SIV display definition files

Files:

cnf.dsp	sivsts.dsp
isb.dsp	strm.dsp
rid.dsp	

Directory Name: data.riddir.acg - SIV ACG RIDs

Files:

acgsd.rid	ccnacg.rid
bvrsg103.rid	cmcacg01.rid
bvrsg10n.rid	cmcacg10.rid

Directory Name: data.riddir.bvr - SIV BVR RIDs

Files:

bvracg.rid	bvrugc78.rid
bvrugc71.rid	bvrugc79.rid
bvrugc72.rid	bvrugc80.rid
bvrugc73.rid	bvrugc81.rid
bvrugc74.rid	bvrugc82.rid
bvrugc75.rid	bvrugc83.rid
bvrugc76.rid	bvrugc84.rid
bvrugc77.rid	bvrugc85.rid

Directory Name: data.riddir.bvr (cont.)**Files:**

ccnbvr.rid	ugcseg16.rid
cmcbvr01.rid	ugcseg17.rid
lmcbvr01.rid	ugcseg18.rid
ugcseg04.rid	ugcseg19.rid
ugcseg05.rid	ugcseg20.dir
ugcseg06.rid	ugcseg21.rid
ugcseg07.rid	ugcseg22.rid
ugcseg08.rid	ugcseg23.rid
ugcseg09.rid	ugcseg24.rid
ugcseg10.rid	ugcseg25.rid
ugcseg11.rid	ugcseg26.rid
ugcseg12.rid	ugcseg27.rid
ugcseg13.rid	ugcseg28.rid
ugcseg14.rid	ugcseg29.rid
ugcseg15.rid	

Directory Name: data.riddir.dgt - SIV DGT RIDs**Files:**

ccndgt.rid	dgtseg06.rid
cmcseg01.rid	dgtseg07.rid
cmcseg90.rid	dgtseg08.rid
dgtnt_p.rid	dgtseg09.rid
dgtsd.rid	dgtseg80.rid
dgtseg01.rid	lmcseg01.rid
dgtseg02.rid	lmcseg11.rid
dgtseg03.rid	lmcsegn0.rid
dgtseg04.rid	lmcsegn.rid
dgtseg05.rid	

Directory Name: data.riddir.mpa - SIV MPA RIDs**Files:**

ccnmpa.rid	ise.rid
------------	---------

Directory Name: data.riddir.scp - SIV SCP RIDs

Files:

ccnscp.rid	gcfroute.rid
------------	--------------

Directory Name: data.riddir.test - SIV Test RIDs

Files:

constant.rid	testseg2.rid
raw.rid	testseg3.rid
rawshort.rid	testseg4.rid
tbffsy4.rid	testseg5.rid
testseg1.rid	testseg6.rid

Directory Name: data.riddir.ugc - SIV UGC RIDs

Files:

bvrseg71.rid	bvrseg79.rid
bvrseg72.rid	bvrseg80.rid
bvrseg73.rid	bvrseg81.rid
bvrseg74.rid	bvrseg82.rid
bvrseg75.rid	bvrseg83.rid
bvrseg76.rid	bvrseg84.rid
bvrseg77.rid	bvrseg85.rid
bvrseg78.rid	

Directory Name: data.shmdir - SIV shared memory init value files

Files:

riv.shm

Directory Name: data.tstdir - SIV test script files

Files:

bconscn.tst	raw.tst
config.tst	
maplmp.tst	

rid.tst
 siv_at.tst
 streams.tst
 validate.tst

Directory Name: datagen - data generation task

Files:

datagen.c	datagen.mak
-----------	-------------

Directory Name: datarcv - data reception task

Files:

datarcv.c	datarcv.mak
-----------	-------------

Directory Name: dataval - data validation task

Files:

dataval.c	dataval.mak
-----------	-------------

Directory Name: include - SIV include files

Files:

bitutil.h	retime.h
datagen.h	rid.h
datarcv.h	riv.h
dataval.h	rivshm.h
dddstd.h	riv_bs.h
dddtypes.h	riv_cnfg.h
ddd_errn.h	riv_ddmp.h
fldndx.h	riv_en.h
mgrod.h	sivdb.h
missing.h	sivmgr.h
odtbl.h	sivtext.h
ostime.h	xrefndx.h
rawgen.h	
rawmsg.h	

Directory Name: include.cis - SIV include files taken from CIS

Files:

cem.h	cis_parms.h
cislib.h	lanmc.h
cis_en.h	scpinout.h
cis_lan.h	ssb_dmp.h

Directory Name: isb_dmp - inbound/outbound block dump task

Files:

dsp_snap.c	isb_dmp.mak
isb_dmp.c	

Directory Name: rawgen - raw data file load/generate task

Files:

rawgen.c	rawvar.c
rawgen.mak	

Directory Name: rivlib - SIV library functions

Files:

buf_dsp.c	rivset.c
buf_dump.c	riv_bs.c
gen_init.c	sivfld.c
get_ddt.c	sivlkup.c
ostime.c	sivrd.c
progid.c	snrdrwmsg.c
rehltbs.c	strltws.c
retime.c	strrpl.c
ridshm.c	svcq.c
rivlib.mak	xrefndx.c

Directory Name: rivshm - SIV shared memory task

Files:

rivshm.c	rivshmrx.mak
rivshm.mak	rivshmsn.mak

Directory Name: sivmgr - SIV OD Manager task

Files:

mgrfat.c	sivmgr.c
mgrod.c	sivmgr.mak

Directory Name: util - SIV test utilities task

Files:

tstfir.c	tstxmsg.c
tstirt.c	tstxmt.c
tstldp.c	util.c
tstmcd.c	util.mak
tstrcv.c	wrtlog.c
tstrtn.c	

4.2 **Changed Files**

Initial submittal.

PROBLEM DISPOSITION

5.1 Problems Closed

5.1.1 SPRs Closed

The following Telos Software Problem Reports (SPRs) are closed with this release of the software.

SPR# Description

- 3759 SIV DDC list leaves residual values from prior CNF. List should reflect only those SIV DDCs from current CNF (on STS display).
- 3760 When entering "disb rawshort" when the rawshort.rid had not previously been loaded, isbdmp task core dumps on a strcpy() error.
- 3765 Acceptance Test script raw.tst has invalid logic for anomalous test condition "stream not loaded" remove stream, or change default before issuing RAW od, and use a valid *.raw file name.
- 3766 The RCVB block count for MID=19 does not correspond to the event notice when a block is actually receive.
- 3767 RCVB MID=0 response should say "unknown MID" not "unkwn MD SEG".
- 3769 Stream display (STRM) does not dynamically remove entries when streams are removed (via SREM). Very misleading since it is unclear which are and aren't loaded.

5.2 Problems Open

5.2.1 SPRs Open

The following SPRs are open against this release of the software.

SPR# Description

- 3735 An attempt to remove a stream which is in the generation state returns an invalid response category of (-7). The invalid error causes the autotester task to core dump.

- 3755 Rid data types modcomp float, bcd, fixed point are not properly supported.
- 3758 When generating data with count=0, the STRM display does not increment the BLK XFR field to show each block going out. BLK XFR remains zero (0).
- 3761 "RID ALREADY LOADED" condition returns an error status. This causes validation to abort. The condition should return a warning (positive return value).
- 3762 FACT float decrement -2.2 2.2 .5 caused a value of -2.3 to be generated before going back to value 2.2 (i.e. -2.3 is out-of-range). Same thing happens to double float when action is increment; it exceeds the high range once before starting back at low range.
- 3764 Validate report shows bcd doy as "0" when rid action was "D". Binary doy was correct with a value of 154. When the action was changed to constant, the constant value of 123 was properly reported. Range of doy on validation report should be 1 to 366 not 365.
- 3768 After a SLOAD the STRM display showed a last-gen-time value.

DETAILED BUILD INSTRUCTIONS

6.1 Environment

The following directories must be created on the target Modcomp 9735 or Sun. Files must be located in the directories listed in Section 4.1 of this document. All dependent software (MSW) must be located on the same partition from where the SIV software will be built.

The list of directories necessary for this release are as follows:

build	- build make files
cSEN	- event notification task - SIV portions (source & make file)
data	- MSW and SIV data files; includes: . on-line SOM files . debug list file . display list file . MSW/SIV startup files . operator directive definition file
data/cnfdir	- configuration definition files
data/dbgdir	- debug definition files
data/dspdir	- display definition files
data/riddir	- directory of RID directories
data/riddir/acg	- ACG RIDs
data/riddir/bvr	- BVR RIDs
data/riddir/dgt	- DGT RIDs
data/riddir/mpa	- MPA RIDs
data/riddir/scp	- SCP RIDs
data/riddir/test	- TEST RIDs
data/riddir/ugc	- UGC RIDs
data/shmdir	- shared memory init file
data/tstdir	- test procedures/script files
datagen	- data generation task
datarcv	- data reception task
dataval	- data validation task
include	- source include files
include/cis	- include files taken from CIS
isb_dmp	- intersubsys. block dump task
rawgen	- raw data load & generation task
rivlib	- SIV library functions
rivshm	- SIV shared memory task
sivmgr	- SIV directive manager task
util	- test utilities

6.2 Pre-Build Procedure

Verify that the version number contained in the PGMID variable within the sysinit.rx (REAL/IX platform) file and sysinit.sn (SUN platform) file, located in the data directory, are correct. During a build, this information will automatically be included in the built application(s). The files may be modified using any ASCII editor.

6.3 Build of SIV Operating Software

6.3.1 REAL/IX Platform

To build the SIV Program Set for this release, the following instructions must be executed at the build112/ level directory. All operator entries are **bolded**.

1. Make the /build112 directory (or equivalent) the current directory.
2. Enter the build command:
make -f build/riv.mak rxbld -e MSWHOME=/msw/build147a/deliv
 (or equivalent) for MSW build147 that was built "ANSI" using the B.3 compiler on the 68k Modcomp.
3. The system will then build the software required. At the successful conclusion, the system will indicate that is done. Figure 6-1 provides a list of all build output files.
4. Should a re-build be necessary, the build directories may be "cleaned" by entering, from the build112 directory: **make -f build/riv.mak clean**. This will remove all object, executables, and the /op and /bin directories.

6.3.2 Sun Platform

To build the SIV Program Set for this release, the following instructions must be executed at the build112/ level directory. All operator entries are **bolded**.

1. Make the /build112 directory (or equivalent) the current directory.
2. Enter the build command:
make -f build/riv.mak sunbld -e MSWHOME=/msw/build147/deliv
 (or equivalent) for MSW build147 that was built using the 3.0 compiler on the SUN.
3. The system will then build the software required. At the successful conclusion, the system will indicate that is done. Figure 6-2 provides a list of all build output files.

4. Should a re-build be necessary, the build directories may be "cleaned" by entering, from the build112 directory: **make -f build/riv.mak clean**. This will remove all object, executables, and the /op and /bin directories.

6.4 Migration of SIV Operating Software

Operational tape creation should use the "cpio" tape format in order to ensure compatibility with MSW installation shell scripts. To create the tape:

1. Insert a 150Mbyte tape cartridge int he tape dirve.
2. Make the build112/op directory (or equivalent) the current directory.
3. Enter: **find . -name "*" -print | cpio -omv -C32768 > /dev/r40t**
(or appropriate tape device)
Note the parameters in these commands are case sensitive.
4. Wait until the copy is completed and the drive lights is no longer lit.
5. Remove and label the tape.

Figure 6-1. ModComp 9735 Post-Build List

```

build112
total 17
drwxr-xr-x    2      176      bin/
drwxr-xr-x    2       64      build/
drwxr-xr-x    2       80      csen/
drwxr-xr-x    8      400      data/
drwxr-xr-x    2       80      datagen/
drwxr-xr-x    2       80      datarcv/
drwxr-xr-x    2       80      dataval/
drwxr-xr-x    3      464      include/
drwxr-xr-x    2      112      isb_dmp/
drwxr-xr-x   13     1232      op/
drwxr-xr-x    2      112      rawgen/
drwxr-xr-x    2      384      rivlib/
drwxr-xr-x    2      176      rivshm/
drwxr-xr-x    2      144      sivmgr/
drwxr-xr-x    2      368      util/

./bin:
total 2757
-rwxr-xr-x    2    101185      csen*
-rwxr-xr-x    2    176305      datagen*
-rwxr-xr-x    2    100437      datarcv*
-rwxr-xr-x    2    168534      dataval*
-rwxr-xr-x    2    170342      isb_dmp*
-rwxr-xr-x    2    155480      rawgen*
-rwxr-xr-x    2    156906      rivshm*
-rwxr-xr-x    2    245829      sivmgr*
-rwxr-xr-x    2    116680      util*

./build:
total 34
-rw-r--r--    1    13643      riv.mak
-rw-r--r--    1     2677      rivenv.inc

./csen:
total 18
-rw-r--r--    1     1726      csen.mak
-rw-r--r--    1     2894      riv_en.c
-rw-r--r--    1     3704      riv_en.o

./data:
total 183
-rw-r--r--    2     1280      align.raw
-rw-r--r--    2     1484      cnf.dfs
drwxr-xr-x    2      144      cnfdir/
drwxr-xr-x    2       48      dbgdir/
-rw-r--r--    2     4477      debug.dat
drwxr-xr-x    2      112      dspdir/
-rw-r--r--    2       44      enhelp.txt
-rw-r--r--    2     1187      files.dat
-rw-r--r--    2     1479      hdir.txt
-rw-r--r--    2     1443      mdspecs.dat
-rw-r--r--    2     1787      nsshdr.raw
-rw-r--r--    2      543      oneblock.raw
-rw-r--r--    2      544      oneword.raw
-rw-r--r--    2     21776      opdirs.siv
drwxr-xr-x    9      144      riddir/
-rw-r--r--    2      256      rivdsp.dat
drwxr-xr-x    2      48      shmdir/

```

```

-rw-r--r--          2          256           short.raw
-rw-r--r--          3         16306          sysinit.rx
-rw-r--r--          2         15829          sysinit.sn
-rw-r--r--          2          2896          term.dat
-rw-r--r--          2         13267        tlm3204.raw
drwxr-xr-x          2          160           tstdir/
./data/cnfdir:
total 28
-rw-r--r--          2         1940          acg.cnf
-rw-r--r--          2         2016          bvr.cnf
-rw-r--r--          3         1924          dgt.cnf
-rw-r--r--          2         1881          mpa.cnf
-rw-r--r--          2         1829          scp.cnf
-rw-r--r--          2         1692          test.cnf
-rw-r--r--          3         1990          ugc.cnf
./data/dbgdir:
total 1
-rw-r--r--          2          480           ridctl.ddx
./data/dspdir:
total 48
-rw-r--r--          2         2941          cnf.dsp
-rw-r--r--          2         1157          isb.dsp
-rw-r--r--          2         5745          rid.dsp
-rw-r--r--          2         4275        sivsts.dsp
-rw-r--r--          2         7836          strm.dsp
./data/riddir:
total 8
drwxr-xr-x          2          128           acg/
drwxr-xr-x          2          752           bvr/
drwxr-xr-x          2          336           dgt/
drwxr-xr-x          2           64           mpa/
drwxr-xr-x          2           64           scp/
drwxr-xr-x          2          192           test/
drwxr-xr-x          2          272           ugc/
./data/riddir/acg:
total 60
-rw-r--r--          2         3787        acgsd.rid
-rw-r--r--          2         10083       bvrsg103.rid
-rw-r--r--          2         10140       bvrsg10n.rid
-rw-r--r--          2         1231        ccnacg.rid
-rw-r--r--          2          975        cmcag01.rid
-rw-r--r--          2         2155       cmcag10.rid
./data/riddir/bvr:
total 265
-rw-r--r--          2         9939        bvracg.rid
-rw-r--r--          2         3554        bvrugc71.rid
-rw-r--r--          2         3554        bvrugc72.rid
-rw-r--r--          2         3554        bvrugc73.rid
-rw-r--r--          2         3554        bvrugc74.rid
-rw-r--r--          2         3554        bvrugc75.rid
-rw-r--r--          2         3554        bvrugc76.rid
-rw-r--r--          2         3554        bvrugc77.rid
-rw-r--r--          2         3554        bvrugc78.rid
-rw-r--r--          2         3554        bvrugc79.rid
-rw-r--r--          2         3554        bvrugc80.rid
-rw-r--r--          2         3554        bvrugc81.rid
-rw-r--r--          2         3554        bvrugc82.rid
-rw-r--r--          2         3554        bvrugc83.rid

```

DSN-DOI-SIV-0-0-RDDX/1.1.2

-rw-r--r--	2	3554	bvrugc84.rid
-rw-r--r--	2	3554	bvrugc85.rid
-rw-r--r--	2	1976	ccnbvr.rid
-rw-r--r--	2	968	cmcbvr01.rid
-rw-r--r--	2	1040	lmcbvr01.rid
-rw-r--r--	2	2241	ugcseg04.rid
-rw-r--r--	2	2107	ugcseg05.rid
-rw-r--r--	2	2081	ugcseg06.rid
-rw-r--r--	2	2081	ugcseg07.rid
-rw-r--r--	2	2080	ugcseg08.rid
-rw-r--r--	2	2087	ugcseg09.rid
-rw-r--r--	2	2087	ugcseg10.rid
-rw-r--r--	2	2087	ugcseg11.rid
-rw-r--r--	2	2081	ugcseg12.rid
-rw-r--r--	2	2081	ugcseg13.rid
-rw-r--r--	2	2087	ugcseg14.rid
-rw-r--r--	2	2081	ugcseg15.rid
-rw-r--r--	2	2087	ugcseg16.rid
-rw-r--r--	2	2087	ugcseg17.rid
-rw-r--r--	2	2087	ugcseg18.rid
-rw-r--r--	2	2087	ugcseg19.rid
-rw-r--r--	2	2082	ugcseg20.rid
-rw-r--r--	2	2082	ugcseg21.rid
-rw-r--r--	2	2082	ugcseg22.rid
-rw-r--r--	2	2082	ugcseg23.rid
-rw-r--r--	2	2088	ugcseg24.rid
-rw-r--r--	2	2088	ugcseg25.rid
-rw-r--r--	2	2088	ugcseg26.rid
-rw-r--r--	2	2088	ugcseg27.rid
-rw-r--r--	2	2081	ugcseg28.rid
-rw-r--r--	2	2081	ugcseg29.rid

./data/riddir/dgt:

total 317			
-rw-r--r--	3	3628	ccndgt.rid
-rw-r--r--	3	974	cmcseg01.rid
-rw-r--r--	3	3515	cmcseg90.rid
-rw-r--r--	3	20368	dgnrt_p.rid
-rw-r--r--	3	3741	dgtsd.rid
-rw-r--r--	2	1458	dgtseg01.rid
-rw-r--r--	2	6539	dgtseg02.rid
-rw-r--r--	2	4903	dgtseg03.rid
-rw-r--r--	2	7550	dgtseg04.rid
-rw-r--r--	2	6693	dgtseg05.rid
-rw-r--r--	2	13956	dgtseg06.rid
-rw-r--r--	2	17942	dgtseg07.rid
-rw-r--r--	2	7020	dgtseg08.rid
-rw-r--r--	2	12226	dgtseg09.rid
-rw-r--r--	2	18886	dgtseg80.rid
-rw-r--r--	3	974	lmcseg01.rid
-rw-r--r--	3	9682	lmcseg11.rid
-rw-r--r--	3	2920	lmcseg0.rid
-rw-r--r--	3	9826	lmcsegnn.rid

./data/riddir/mpa:

total 8			
-rw-r--r--	2	1040	ccnmpa.rid
-rw-r--r--	2	2165	ise.rid

./data/riddir/scp:

total 13			
-rw-r--r--	2	1671	ccnscp.rid
-rw-r--r--	2	4527	gcfroute.rid

```
./data/riddir/test:
total 46
-rw-r--r--    2      1846      constant.rid
-rw-r--r--    2      2525      raw.rid
-rw-r--r--    2      2643      rawshort.rid
-rw-r--r--    2      9001      tbfsy4.rid
-rw-r--r--    2      835       testseg1.rid
-rw-r--r--    2      835       testseg2.rid
-rw-r--r--    2      835       testseg3.rid
-rw-r--r--    2      835       testseg4.rid
-rw-r--r--    2      835       testseg5.rid
-rw-r--r--    2      835       testseg6.rid

./data/riddir/ugc:
total 105
-rw-r--r--    3      3554      bvrseg71.rid
-rw-r--r--    3      3120      bvrseg72.rid
-rw-r--r--    3      3113      bvrseg73.rid
-rw-r--r--    3      3120      bvrseg74.rid
-rw-r--r--    3      3121      bvrseg75.rid
-rw-r--r--    3      3120      bvrseg76.rid
-rw-r--r--    3      3120      bvrseg77.rid
-rw-r--r--    3      3120      bvrseg78.rid
-rw-r--r--    3      3120      bvrseg79.rid
-rw-r--r--    3      3125      bvrseg80.rid
-rw-r--r--    3      3127      bvrseg81.rid
-rw-r--r--    3      3129      bvrseg82.rid
-rw-r--r--    3      3128      bvrseg83.rid
-rw-r--r--    3      3128      bvrseg84.rid
-rw-r--r--    3      3129      bvrseg85.rid

./data/shmdir:
total 24
-rw-r--r--    2      11318     riv.shm

./data/tstdir:
total 187
-rw-r--r--    2      66861     bconcn.tst
-rw-r--r--    2      2012      config.tst
-rw-r--r--    2      944       mpalmp.tst
-rw-r--r--    2      3038      raw.tst
-rw-r--r--    2      2541      rid.tst
-rw-r--r--    2      9864      siv_at.tst
-rw-r--r--    2      3345      streams.tst
-rw-r--r--    2      5064      validate.tst

./datagen:
total 178
-rw-r--r--    1      66395     datagen.c
-rw-r--r--    1      695       datagen.mak
-rw-r--r--    1      22103     datagen.o

./datarcv:
total 70
-rw-r--r--    1      25555     datarcv.c
-rw-r--r--    1      1304      datarcv.mak
-rw-r--r--    1      7594      datarcv.o

./dataval:
total 137
-rw-r--r--    1      49701     dataval.c
-rw-r--r--    1      1380      dataval.mak
-rw-r--r--    1      17095     dataval.o
```

./include:

total	248		
-rw-r--r--	1	2379	butil.h
drwxr-xr-x	2	160	cis/
-rw-r--r--	1	4596	datagen.h
-rw-r--r--	1	3329	datarcv.h
-rw-r--r--	1	3755	dataval.h
-rw-r--r--	1	7571	ddd_erm.h
-rw-r--r--	1	2782	dddstd.h
-rw-r--r--	1	24472	dddtypes.h
-rw-r--r--	1	1086	fldndx.h
-rw-r--r--	1	1373	mgrod.h
-rw-r--r--	1	878	missing.h
-rw-r--r--	1	2709	odtbl.h
-rw-r--r--	1	2147	ostime.h
-rw-r--r--	1	1720	rawgen.h
-rw-r--r--	1	3168	rawmsg.h
-rw-r--r--	1	2766	retime.h
-rw-r--r--	1	7852	rid.h
-rw-r--r--	1	4613	riv.h
-rw-r--r--	1	1926	riv_bs.h
-rw-r--r--	1	3941	riv_cfg.h
-rw-r--r--	1	1629	riv_ddmp.h
-rw-r--r--	1	2617	riv_en.h
-rw-r--r--	1	6058	rivshm.h
-rw-r--r--	1	3149	sivdb.h
-rw-r--r--	1	10782	sivmgr.h
-rw-r--r--	1	2215	sivtext.h
-rw-r--r--	1	6471	xrefndx.h

./include/cis:

total 32

total	32		
-rw-r--r--	1	1187	cem.h
-rw-r--r--	1	1499	cis_en.h
-rw-r--r--	1	661	cis_lan.h
-rw-r--r--	1	7253	cis_parms.h
-rw-r--r--	1	663	cislib.h
-rw-r--r--	1	889	lanmc.h
-rw-r--r--	1	502	sepinout.h
-rw-r--r--	1	1236	ssb_dmp.h

./isb_dmp:

total 71

total	71		
-rw-r--r--	1	5801	dsp_snap.c
-rw-r--r--	1	3437	dsp_snap.o
-rw-r--r--	1	15393	isb_dmp.c
-rw-r--r--	1	1504	isb_dmp.mak
-rw-r--r--	1	7553	isb_dmp.o

./op:

total 9764

total	9764		
-rw-r--r--	2	1280	align.raw
-rwxr-xr-x	8	191833	atest*
-rwxr-xr-x	8	2412	cleanup.sh*
-rw-r--r--	2	1484	cnf.dfs
drwxr-xr-x	2	144	cnfdir/
-rwxr-xr-x	7	116896	csdpscd*
-rwxr-xr-x	2	101185	csen*
-rwxr-xr-x	7	99481	cslg*
-rwxr-xr-x	7	209750	csmctask*
-rwxr-xr-x	7	130721	csmdstat*
-rwxr-xr-x	7	99133	cstcts*
-rwxr-xr-x	7	127561	cswdisp*
-rwxr-xr-x	2	176305	datagen*

-rwxr-xr-x	2	100437	datarcv*
-rwxr-xr-x	2	168534	dataval*
drwxr-xr-x	2	48	dbgdir/
-rw-r--r--	8	762	ddx.dfs
-rwxr-xr-x	8	197615	debug*
-rw-r--r--	2	4477	debug.dat
-rw-r--r--	8	2228	debug.shm
-rwxr-xr-x	8	207648	dsp*
drwxr-xr-x	2	976	dspdir/
-rw-r--r--	2	44	enhelp.txt
-rwxr-xr-x	8	216157	files*
-rw-r--r--	2	1187	files.dat
-rwxr-xr-x	8	1579	go.sh*
-rw-r--r--	2	1479	hdir.txt
-rw-r--r--	8	7117	hevt.txt
-rwxr-xr-x	8	110231	icpt*
-rw-r--r--	8	826	icpt.dat
-rwxr-xr-x	2	170342	isb_dmp*
-rwxr-xr-x	8	304	kill.sh*
-rw-r--r--	2	1443	mdspecs.dat
-rwxr-xr-x	8	167762	mdtask*
-rwxr-xr-x	7	71866	mskill*
-rw-r--r--	2	1787	nsshdr.raw
-rwxr-xr-x	8	128680	odtask*
-rw-r--r--	2	543	oneblock.raw
-rw-r--r--	2	544	oneword.raw
-rw-r--r--	1	38918	opdirs.dat
-rw-r--r--	2	21776	opdirs.siv
-rwxr-xr-x	8	145340	outbound*
-rwxr-xr-x	2	155480	rawgen*
drwxr-xr-x	9	144	riddir/
-rw-r--r--	2	256	rividsp.dat
-rwxr-xr-x	2	156906	rivshm*
-rwxr-xr-x	8	1707	rmshm.sh*
-rwxr-xr-x	8	168932	rpt*
drwxr-xr-x	2	32	rptdir/
drwxr-xr-x	2	48	shmdir/
-rw-r--r--	2	256	short.raw
-rwxr-xr-x	2	245829	sivmgr*
-rwxr-xr-x	8	2029	snapshot.sh*
-rw-r--r--	8	1693	ssw_ed.dat
-rw-r--r--	8	7954	sswdsp.dat
-rwxr-xr-x	8	198922	sswshm*
-rwxr-xr-x	7	112632	stfmain*
-rwxr-xr-x	7	136823	sysinit*
-rw-r--r--	3	16306	sysinit.ini
-rw-r--r--	3	16306	sysinit.rx
-rw-r--r--	2	15829	sysinit.sn
-rwxr-xr-x	8	162802	term*
-rw-r--r--	2	2896	term.dat
-rwxr-xr-x	8	132	term.sh*
-rwxr-xr-x	8	131928	termkbd*
-rwxr-xr-x	8	111386	termscm*
-rw-r--r--	2	13267	tlm3204.raw
-rwxr-xr-x	8	108589	tmr*
drwxr-xr-x	2	48	tstcdir/
drwxr-xr-x	2	48	tstcnf/
drwxr-xr-x	2	160	tstdir/
drwxr-xr-x	2	336	tstrdir/
drwxr-xr-x	2	272	tstrid/
-rw-r--r--	8	472	updat.txt
-rwxr-xr-x	2	116680	util*

./op/cnfdi:

total 28			
-rw-r--r--	2	1940	acg.cnf
-rw-r--r--	2	2016	bvr.cnf
-rw-r--r--	3	1924	dgt.cnf
-rw-r--r--	2	1881	mpa.cnf
-rw-r--r--	2	1829	scp.cnf
-rw-r--r--	2	1692	test.cnf
-rw-r--r--	3	1990	ugc.cnf

./op/dbgdir:			
total 1			
-rw-r--r--	2	480	ridctl.ddx
./op/dspdir:			
total 332			
-rw-r--r--	8	3140	acolr.dsp
-rw-r--r--	8	1606	atest.dsp
-rw-r--r--	2	2941	cnf.dsp
-rw-r--r--	8	759	color.dsp
-rw-r--r--	8	942	dbg.dsp
-rw-r--r--	8	1149	ddx.dsp
-rw-r--r--	8	1212	ddxf.dsp
-rw-r--r--	8	1464	dsk.dsp
-rw-r--r--	8	1070	dsp0.dsp
-rw-r--r--	8	1613	dsp1.dsp
-rw-r--r--	8	3147	dsp2.dsp
-rw-r--r--	8	2630	dsp3.dsp
-rw-r--r--	8	648	dtest.dsp
-rw-r--r--	8	4504	ed.dsp
-rw-r--r--	8	1016	enlast.dsp
-rw-r--r--	8	1487	enoff.dsp
-rw-r--r--	8	958	error.dsp
-rw-r--r--	8	1238	file.dsp
-rw-r--r--	8	767	fncap.dsp
-rw-r--r--	8	738	full.dsp
-rw-r--r--	8	48220	grid.dsp
-rw-r--r--	8	682	half.dsp
-rw-r--r--	8	760	hdir.dsp
-rw-r--r--	8	806	hdis.dsp
-rw-r--r--	8	794	hevt.dsp
-rw-r--r--	8	1747	icpt1.dsp
-rw-r--r--	8	1108	icpt2.dsp
-rw-r--r--	8	2313	icpt3.dsp
-rw-r--r--	8	456	invld.dsp
-rw-r--r--	2	1157	isb.dsp
-rw-r--r--	8	3125	lmd.dsp
-rw-r--r--	8	905	md.dsp
-rw-r--r--	8	1113	midin.dsp
-rw-r--r--	8	1095	od1.dsp
-rw-r--r--	8	1050	od2.dsp
-rw-r--r--	8	1521	qdir.dsp
-rw-r--r--	8	246	qdis.dsp
-rw-r--r--	2	5745	rid.dsp
-rw-r--r--	8	5249	rpt.dsp
-rw-r--r--	8	1615	rpt0.dsp
-rw-r--r--	8	1416	shm.dsp
-rw-r--r--	2	4275	sivsts.dsp
-rw-r--r--	8	696	somds.dsp
-rw-r--r--	8	717	somfn.dsp
-rw-r--r--	8	691	somod.dsp
-rw-r--r--	2	7836	strm.dsp
-rw-r--r--	8	4226	sts_link.dsp
-rw-r--r--	8	5841	sts_top.dsp
-rw-r--r--	8	1536	test1.dsp
-rw-r--r--	8	959	test2.dsp
-rw-r--r--	8	935	test_pie.dsp
-rw-r--r--	8	780	testmsg.dsp
-rw-r--r--	8	1536	testnew.dsp
-rw-r--r--	8	1212	testpoly.dsp
-rw-r--r--	8	764	test rpt.dsp
-rw-r--r--	8	2070	time.dsp
-rw-r--r--	8	1301	tmr.dsp
-rw-r--r--	8	1021	txt.dsp

-rw-r--r--	8	756	updat.dsp
 ./op/riddir:			
total 8			
drwxr-xr-x	2	128	acg/
drwxr-xr-x	2	752	bvr/
drwxr-xr-x	2	336	dgt/
drwxr-xr-x	2	64	mpa/
drwxr-xr-x	2	64	scp/
drwxr-xr-x	2	192	test/
drwxr-xr-x	2	272	uge/
 ./op/riddir/acg:			
total 60			
-rw-r--r--	2	3787	acgsd.rid
-rw-r--r--	2	10083	bvrsrg103.rid
-rw-r--r--	2	10140	bvrsrg10n.rid
-rw-r--r--	2	1231	ccnacg.rid
-rw-r--r--	2	975	cmcacg01.rid
-rw-r--r--	2	2155	cmcacg10.rid
 ./op/riddir/bvr:			
total 265			
-rw-r--r--	2	9939	bvracg.rid
-rw-r--r--	2	3554	bvrugc71.rid
-rw-r--r--	2	3554	bvrugc72.rid
-rw-r--r--	2	3554	bvrugc73.rid
-rw-r--r--	2	3554	bvrugc74.rid
-rw-r--r--	2	3554	bvrugc75.rid
-rw-r--r--	2	3554	bvrugc76.rid
-rw-r--r--	2	3554	bvrugc77.rid
-rw-r--r--	2	3554	bvrugc78.rid
-rw-r--r--	2	3554	bvrugc79.rid
-rw-r--r--	2	3554	bvrugc80.rid
-rw-r--r--	2	3554	bvrugc81.rid
-rw-r--r--	2	3554	bvrugc82.rid
-rw-r--r--	2	3554	bvrugc83.rid
-rw-r--r--	2	3554	bvrugc84.rid
-rw-r--r--	2	3554	bvrugc85.rid
-rw-r--r--	2	1976	ccnbvrid
-rw-r--r--	2	968	cmcbvrid
-rw-r--r--	2	1040	lmcvrid
-rw-r--r--	2	2241	ugcseg04.rid
-rw-r--r--	2	2107	ugcseg05.rid
-rw-r--r--	2	2081	ugcseg06.rid
-rw-r--r--	2	2081	ugcseg07.rid
-rw-r--r--	2	2080	ugcseg08.rid
-rw-r--r--	2	2087	ugcseg09.rid
-rw-r--r--	2	2087	ugcseg10.rid
-rw-r--r--	2	2087	ugcseg11.rid
-rw-r--r--	2	2081	ugcseg12.rid
-rw-r--r--	2	2081	ugcseg13.rid
-rw-r--r--	2	2087	ugcseg14.rid
-rw-r--r--	2	2081	ugcseg15.rid
-rw-r--r--	2	2087	ugcseg16.rid
-rw-r--r--	2	2087	ugcseg17.rid
-rw-r--r--	2	2087	ugcseg18.rid
-rw-r--r--	2	2087	ugcseg19.rid
-rw-r--r--	2	2082	ugcseg20.rid
-rw-r--r--	2	2082	ugcseg21.rid
-rw-r--r--	2	2082	ugcseg22.rid
-rw-r--r--	2	2082	ugcseg23.rid
-rw-r--r--	2	2088	ugcseg24.rid
-rw-r--r--	2	2088	ugcseg25.rid

-rw-r--r--	2	2088	ugcseg26.rid
-rw-r--r--	2	2088	ugcseg27.rid
-rw-r--r--	2	2081	ugcseg28.rid
-rw-r--r--	2	2081	ugcseg29.rid
 ./op/riddir/dgt:			
total 317			
-rw-r--r--	3	3628	ccndgt.rid
-rw-r--r--	3	974	cmcseg01.rid
-rw-r--r--	3	3515	cmcseg90.rid
-rw-r--r--	3	20368	dgtmr_p.rid
-rw-r--r--	3	3741	dgtsd.rid
-rw-r--r--	2	1458	dgtseg01.rid
-rw-r--r--	2	6539	dgtseg02.rid
-rw-r--r--	2	4903	dgtseg03.rid
-rw-r--r--	2	7550	dgtseg04.rid
-rw-r--r--	2	6693	dgtseg05.rid
-rw-r--r--	2	13956	dgtseg06.rid
-rw-r--r--	2	17942	dgtseg07.rid
-rw-r--r--	2	7020	dgtseg08.rid
-rw-r--r--	2	12226	dgtseg09.rid
-rw-r--r--	2	18886	dgtseg80.rid
-rw-r--r--	3	974	lmcseg01.rid
-rw-r--r--	3	9682	lmcseg11.rid
-rw-r--r--	3	2920	lmcseg00.rid
-rw-r--r--	3	9826	lmcsegnn.rid
 ./op/riddir/mpa:			
total 8			
-rw-r--r--	2	1040	ccnmpa.rid
-rw-r--r--	2	2165	ise.rid
 ./op/riddir/scp:			
total 13			
-rw-r--r--	2	1671	ccnscp.rid
-rw-r--r--	2	4527	gcfroute.rid
 ./op/riddir/test:			
total 46			
-rw-r--r--	2	1846	constant.rid
-rw-r--r--	2	2525	raw.rid
-rw-r--r--	2	2643	rawshort.rid
-rw-r--r--	2	9001	tbfsy4.rid
-rw-r--r--	2	835	testseg1.rid
-rw-r--r--	2	835	testseg2.rid
-rw-r--r--	2	835	testseg3.rid
-rw-r--r--	2	835	testseg4.rid
-rw-r--r--	2	835	testseg5.rid
-rw-r--r--	2	835	testseg6.rid
 ./op/riddir/ugc:			
total 105			
-rw-r--r--	3	3554	bvrseg71.rid
-rw-r--r--	3	3120	bvrseg72.rid
-rw-r--r--	3	3113	bvrseg73.rid
-rw-r--r--	3	3120	bvrseg74.rid
-rw-r--r--	3	3121	bvrseg75.rid
-rw-r--r--	3	3120	bvrseg76.rid
-rw-r--r--	3	3120	bvrseg77.rid
-rw-r--r--	3	3120	bvrseg78.rid
-rw-r--r--	3	3120	bvrseg79.rid
-rw-r--r--	3	3125	bvrseg80.rid
-rw-r--r--	3	3127	bvrseg81.rid
-rw-r--r--	3	3129	bvrseg82.rid

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-rw-r--r--	3	3128	bvrseg83.rid
-rw-r--r--	3	3128	bvrseg84.rid
-rw-r--r--	3	3129	bvrseg85.rid
./op/rptdir:			
total 0			
./op/shmdir:			
total 24			
-rw-r--r--	2	11318	riv.shm
./op/tstcdir:			
total 4			
-rw-r--r--	3	1924	dgt.cnf
./op/tstcnf:			
total 4			
-rw-r--r--	3	1990	uge.cnf
./op/tstdir:			
total 187			
-rw-r--r--	2	66861	bconscn.tst
-rw-r--r--	2	2012	config.tst
-rw-r--r--	2	944	mpalmp.tst
-rw-r--r--	2	3038	raw.tst
-rw-r--r--	2	2541	rid.tst
-rw-r--r--	2	9864	siv_at.tst
-rw-r--r--	2	3345	streams.tst
-rw-r--r--	2	5064	validate.tst
./op/tstrdir:			
total 115			
-rw-r--r--	3	3628	ccndgt.rid
-rw-r--r--	3	974	cmcseg01.rid
-rw-r--r--	3	3515	cmcseg90.rid
-rw-r--r--	3	20368	dgnrt_p.rid
-rw-r--r--	3	3741	dgtsd.rid
-rw-r--r--	3	974	lmcseg01.rid
-rw-r--r--	3	9682	lmcseg11.rid
-rw-r--r--	3	2920	lmcseg0.rid
-rw-r--r--	3	9826	lmcsegn.rid
./op/tstrid:			
total 105			
-rw-r--r--	3	3554	bvrseg71.rid
-rw-r--r--	3	3120	bvrseg72.rid
-rw-r--r--	3	3113	bvrseg73.rid
-rw-r--r--	3	3120	bvrseg74.rid
-rw-r--r--	3	3121	bvrseg75.rid
-rw-r--r--	3	3120	bvrseg76.rid
-rw-r--r--	3	3120	bvrseg77.rid
-rw-r--r--	3	3120	bvrseg78.rid
-rw-r--r--	3	3120	bvrseg79.rid
-rw-r--r--	3	3125	bvrseg80.rid
-rw-r--r--	3	3127	bvrseg81.rid
-rw-r--r--	3	3129	bvrseg82.rid
-rw-r--r--	3	3128	bvrseg83.rid
-rw-r--r--	3	3128	bvrseg84.rid
-rw-r--r--	3	3129	bvrseg85.rid
./rawgen:			
total 52			
-rw-r--r--	1	14370	rawgen.c
-rw-r--r--	1	1211	rawgen.mak

-rw-r--r--	1	4815	rawgen.o
-rw-r--r--	1	3240	rawvar.c
-rw-r--r--	1	612	rawvar.o
 ./rivlib:			
total	542		
-rw-r--r--	1	6486	buf_dsp.c
-rw-r--r--	1	2379	buf_dump.c
-rw-r--r--	1	2486	gen_init.c
-rw-r--r--	1	3529	get_ddt.c
-rw-r--r--	1	49230	libriv.a
-rw-r--r--	1	4805	ostime.c
-rw-r--r--	1	4149	progid.c
-rw-r--r--	1	2776	relhlbs.c
-rw-r--r--	1	9682	retime.c
-rw-r--r--	1	23884	ridshm.c
-rw-r--r--	1	9466	riv_bs.c
-rw-r--r--	1	3618	rivlib.mak
-rw-r--r--	1	2028	rivset.c
-rw-r--r--	1	35509	sivfld.c
-rw-r--r--	1	8742	sivlkup.c
-rw-r--r--	1	46324	sivrd.c
-rw-r--r--	1	2534	sndrwmsg.c
-rw-r--r--	1	2823	strltws.c
-rw-r--r--	1	4097	strrpl.c
-rw-r--r--	1	27157	svcq.c
-rw-r--r--	1	15227	xrefndx.c
 ./rivshm:			
total	320		
-rw-r--r--	1	2567	rivshm.c
-rw-r--r--	1	2161	rivshm.mak
-rw-r--r--	1	101971	rivshm.tmp
-rw-r--r--	1	28072	rivshm_t.c
-rw-r--r--	1	17275	rivshm_t.o
-rw-r--r--	1	1741	rivshm_v.c
-rw-r--r--	1	1160	rivshm_v.o
-rw-r--r--	1	2046	rivshmxr.mak
-rw-r--r--	1	1841	rivshmsn.mak
 ./sivmgr:			
total	469		
-rw-r--r--	1	35770	mgrfat.c
-rw-r--r--	1	9235	mgrfat.o
-rw-r--r--	1	126756	mgrod.c
-rw-r--r--	1	32431	mgrod.o
-rw-r--r--	1	21556	sivmgr.c
-rw-r--r--	1	1517	sivmgr.mak
-rw-r--r--	1	7135	sivmgr.o
 ./util:			
total	231		
-rw-r--r--	1	3409	tstfir.c
-rw-r--r--	1	2135	tstfir.o
-rw-r--r--	1	3015	tstirt.c
-rw-r--r--	1	1552	tstirt.o
-rw-r--r--	1	4214	tstldp.c
-rw-r--r--	1	1730	tstldp.o
-rw-r--r--	1	10731	tstmed.c
-rw-r--r--	1	3081	tstmed.o
-rw-r--r--	1	8588	tstrcv.c
-rw-r--r--	1	5365	tstrcv.o
-rw-r--r--	1	3669	tstrtn.c
-rw-r--r--	1	2309	tstrtn.o

-rw-r--r--	1	3126	tstxmsg.c
-rw-r--r--	1	1503	tstxmsg.o
-rw-r--r--	1	1695	tstxmt.c
-rw-r--r--	1	1642	tstxmt.o
-rw-r--r--	1	32797	util.c
-rw-r--r--	1	734	util.mak
-rw-r--r--	1	12167	util.o
-rw-r--r--	1	4504	wrtlog.c
-rw-r--r--	1	1792	wrtlog.o

Figure 6-2. SUN Post-Build List

```

build112
total 32
drwxr-xr-x    2      512      bin/
drwxr-xr-x    2      512      build/
drwxr-xr-x    2      512      csen/
drwxr-xr-x    8      512      data/
drwxr-xr-x    2      512      datagen/
drwxr-xr-x    2      512      datarcv/
drwxr-xr-x    2      512      dataval/
drwxr-xr-x    3     1024      include/
drwxr-xr-x    2      512      isb_dmp/
drwxr-xr-x   13    1536      op/
drwxr-xr-x    2      512      rawgen/
drwxr-xr-x    2      512      rivlib/
drwxr-xr-x    2      512      rivshm/
drwxr-xr-x    2      512      sivmgr/
drwxr-xr-x    2      512      util/

./bin:
total 3904
-rwxr-xr-x    2    122200      csen*
-rwxr-xr-x    2    236552      datagen*
-rwxr-xr-x    2    129916      datarcv*
-rwxr-xr-x    2    218772      dataval*
-rwxr-xr-x    2    231348      isb_dmp*
-rwxr-xr-x    2    211052      rawgen*
-rwxr-xr-x    2    203468      rivshm*
-rwxr-xr-x    2    393468      sivmgr*
-rwxr-xr-x    2    155580      util*

./build:
total 34
-rw-r--r--    1    13643      riv.mak
-rw-r--r--    1     2677      rivenv.inc

./csen:
total 38
-rw-r--r--    1     1726      csen.mak
-rw-r--r--    1     2894      riv_en.c
-rw-r--r--    1    14148      riv_en.o

./data:
total 196
-rw-r--r--    2     1280      align.raw
-rw-r--r--    2     1484      cnf.dfs
drwxr-xr-x    2      512      cnkdir/
drwxr-xr-x    2      512      dbgdir/
-rw-r--r--    2     4477      debug.dat
drwxr-xr-x    2      512      dspdir/
-rw-r--r--    2      44      enhelp.txt
-rw-r--r--    2     1187      files.dat
-rw-r--r--    2     1479      hdir.txt
-rw-r--r--    2     1443      mdspecs.dat
-rw-r--r--    2     1787      nsshdr.raw
-rw-r--r--    2      543      oneblock.raw
-rw-r--r--    2      544      oneword.raw
-rw-r--r--    2    21776      opdirs.siv
drwxr-xr-x   9      512      riddir/
-rw-r--r--    2      256      rivdsp.dat
drwxr-xr-x    2      512      shmdir/
-rw-r--r--    2      256      short.raw

```

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-rw-r--r--	2	16306	sysinit.rx
-rw-r--r--	3	15829	sysinit.sn
-rw-r--r--	2	2896	term.dat
-rw-r--r--	2	13267	tlm3204.raw
drwxr-xr-x	2	512	tstdir/
 ./data/cnfdir:			
total 28			
-rw-r--r--	2	1940	acg.cnf
-rw-r--r--	2	2016	bvr.cnf
-rw-r--r--	3	1924	dgt.cnf
-rw-r--r--	2	1881	mpa.cnf
-rw-r--r--	2	1829	scp.cnf
-rw-r--r--	2	1692	test.cnf
-rw-r--r--	3	1990	ugc.cnf
 ./data/dbgdir:			
total 2			
-rw-r--r--	2	480	ridctl.ddx
 ./data/dspdir:			
total 48			
-rw-r--r--	2	2941	cnf.dsp
-rw-r--r--	2	1157	isb.dsp
-rw-r--r--	2	5745	rid.dsp
-rw-r--r--	2	4275	sivsts.dsp
-rw-r--r--	2	7836	strm.dsp
 ./data/riddir:			
total 16			
drwxr-xr-x	2	512	acg/
drwxr-xr-x	2	1536	bvr/
drwxr-xr-x	2	512	dgt/
drwxr-xr-x	2	512	mpa/
drwxr-xr-x	2	512	scp/
drwxr-xr-x	2	512	test/
drwxr-xr-x	2	512	ugc/
 ./data/riddir/acg:			
total 60			
-rw-r--r--	2	3787	acgsd.rid
-rw-r--r--	2	10083	bvrsg103.rid
-rw-r--r--	2	10140	bvrsg10n.rid
-rw-r--r--	2	1231	ccnacg.rid
-rw-r--r--	2	975	cmcacg01.rid
-rw-r--r--	2	2155	cmcacg10.rid
 ./data/riddir/bvr:			
total 306			
-rw-r--r--	2	9939	bvracg.rid
-rw-r--r--	2	3554	bvrugc71.rid
-rw-r--r--	2	3554	bvrugc72.rid
-rw-r--r--	2	3554	bvrugc73.rid
-rw-r--r--	2	3554	bvrugc74.rid
-rw-r--r--	2	3554	bvrugc75.rid
-rw-r--r--	2	3554	bvrugc76.rid
-rw-r--r--	2	3554	bvrugc77.rid
-rw-r--r--	2	3554	bvrugc78.rid
-rw-r--r--	2	3554	bvrugc79.rid
-rw-r--r--	2	3554	bvrugc80.rid
-rw-r--r--	2	3554	bvrugc81.rid
-rw-r--r--	2	3554	bvrugc82.rid
-rw-r--r--	2	3554	bvrugc83.rid
-rw-r--r--	2	3554	bvrugc84.rid

-rw-r--r--	2	3554	bvrugc85.rid
-rw-r--r--	2	1976	ccnbvr.rid
-rw-r--r--	2	968	cmcbvr01.rid
-rw-r--r--	2	1040	lmcbvr01.rid
-rw-r--r--	2	2241	ugcseg04.rid
-rw-r--r--	2	2107	ugcseg05.rid
-rw-r--r--	2	2081	ugcseg06.rid
-rw-r--r--	2	2081	ugcseg07.rid
-rw-r--r--	2	2080	ugcseg08.rid
-rw-r--r--	2	2087	ugcseg09.rid
-rw-r--r--	2	2087	ugcseg10.rid
-rw-r--r--	2	2087	ugcseg11.rid
-rw-r--r--	2	2081	ugcseg12.rid
-rw-r--r--	2	2081	ugcseg13.rid
-rw-r--r--	2	2087	ugcseg14.rid
-rw-r--r--	2	2081	ugcseg15.rid
-rw-r--r--	2	2087	ugcseg16.rid
-rw-r--r--	2	2087	ugcseg17.rid
-rw-r--r--	2	2087	ugcseg18.rid
-rw-r--r--	2	2087	ugcseg19.rid
-rw-r--r--	2	2082	ugcseg20.rid
-rw-r--r--	2	2082	ugcseg21.rid
-rw-r--r--	2	2082	ugcseg22.rid
-rw-r--r--	2	2082	ugcseg23.rid
-rw-r--r--	2	2088	ugcseg24.rid
-rw-r--r--	2	2088	ugcseg25.rid
-rw-r--r--	2	2088	ugcseg26.rid
-rw-r--r--	2	2088	ugcseg27.rid
-rw-r--r--	2	2081	ugcseg28.rid
-rw-r--r--	2	2081	ugcseg29.rid

./data/riddir/dgt:

total 312

-rw-r--r--	3	3628	ccndgt.rid
-rw-r--r--	3	974	cmcseg01.rid
-rw-r--r--	3	3515	cmcseg90.rid
-rw-r--r--	3	20368	dgnrt_p.rid
-rw-r--r--	3	3741	dgtsd.rid
-rw-r--r--	2	1458	dgtseg01.rid
-rw-r--r--	2	6539	dgtseg02.rid
-rw-r--r--	2	4903	dgtseg03.rid
-rw-r--r--	2	7550	dgtseg04.rid
-rw-r--r--	2	6693	dgtseg05.rid
-rw-r--r--	2	13956	dgtseg06.rid
-rw-r--r--	2	17942	dgtseg07.rid
-rw-r--r--	2	7020	dgtseg08.rid
-rw-r--r--	2	12226	dgtseg09.rid
-rw-r--r--	2	18886	dgtseg80.rid
-rw-r--r--	3	974	lmcseg01.rid
-rw-r--r--	3	9682	lmcseg11.rid
-rw-r--r--	3	2920	lmcsegn0.rid
-rw-r--r--	3	9826	lmcsegn.rid

./data/riddir/mpa:

total 10

-rw-r--r--	2	1040	ccnmpa.rid
-rw-r--r--	2	2165	ise.rid

./data/riddir/scp:

total 14

-rw-r--r--	2	1671	ccnscp.rid
-rw-r--r--	2	4527	gcfroute.rid

./data/riddir/test:

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total 46
-rw-r--r--    2          1846      constant.rid
-rw-r--r--    2          2525      raw.rid
-rw-r--r--    2          2643      rawshort.rid
-rw-r--r--    2          9001      tbfsy4.rid
-rw-r--r--    2          835       testseg1.rid
-rw-r--r--    2          835       testseg2.rid
-rw-r--r--    2          835       testseg3.rid
-rw-r--r--    2          835       testseg4.rid
-rw-r--r--    2          835       testseg5.rid
-rw-r--r--    2          835       testseg6.rid

./data/riddir/ugc:
total 120
-rw-r--r--    3          3554      bvrseg71.rid
-rw-r--r--    3          3120      bvrseg72.rid
-rw-r--r--    3          3113      bvrseg73.rid
-rw-r--r--    3          3120      bvrseg74.rid
-rw-r--r--    3          3121      bvrseg75.rid
-rw-r--r--    3          3120      bvrseg76.rid
-rw-r--r--    3          3120      bvrseg77.rid
-rw-r--r--    3          3120      bvrseg78.rid
-rw-r--r--    3          3120      bvrseg79.rid
-rw-r--r--    3          3125      bvrseg80.rid
-rw-r--r--    3          3127      bvrseg81.rid
-rw-r--r--    3          3129      bvrseg82.rid
-rw-r--r--    3          3128      bvrseg83.rid
-rw-r--r--    3          3128      bvrseg84.rid
-rw-r--r--    3          3129      bvrseg85.rid

./data/shmdir:
total 24
-rw-r--r--    2          11318     riv.shm

./data/tstdir:
total 188
-rw-r--r--    2          66861     bconscn.tst
-rw-r--r--    2          2012      config.tst
-rw-r--r--    2          944       mpalmp.tst
-rw-r--r--    2          3038      raw.tst
-rw-r--r--    2          2541      rid.tst
-rw-r--r--    2          9864      siv_at.tst
-rw-r--r--    2          3345      streams.tst
-rw-r--r--    2          5064      validate.tst

./datagen:
total 356
-rw-r--r--    1          66395     datagen.c
-rw-r--r--    1          695       datagen.mak
-rw-r--r--    1          103688    datagen.o

./datarcv:
total 150
-rw-r--r--    1          25555     datarcv.c
-rw-r--r--    1          1304      datarcv.mak
-rw-r--r--    1          48336     datarcv.o

./dataaval:
total 248
-rw-r--r--    1          49701     dataaval.c
-rw-r--r--    1          1380      dataaval.mak
-rw-r--r--    1          74348     dataaval.o

./include:

```

```

total 254
-rw-r--r--          1      2379      bitutil.h
drwxr-xr-x          2       512       cis/
-rw-r--r--          1     4596      datagen.h
-rw-r--r--          1     3329      datarcv.h
-rw-r--r--          1     3755      dataval.h
-rw-r--r--          1     7571      ddd_errn.h
-rw-r--r--          1     2782      dddstd.h
-rw-r--r--          1    24472      dddtypes.h
-rw-r--r--          1     1086      fldndx.h
-rw-r--r--          1     1373      mgrod.h
-rw-r--r--          1      878       missing.h
-rw-r--r--          1     2709      odtbl.h
-rw-r--r--          1     2147      ostime.h
-rw-r--r--          1     1720      rawgen.h
-rw-r--r--          1     3168      rawmsg.h
-rw-r--r--          1     2766      retime.h
-rw-r--r--          1     7852      rid.h
-rw-r--r--          1     4613      riv.h
-rw-r--r--          1     1926      riv_bs.h
-rw-r--r--          1     3941      riv_cfg.h
-rw-r--r--          1     1629      riv_ddmp.h
-rw-r--r--          1     2617      riv_en.h
-rw-r--r--          1     6058      rivshm.h
-rw-r--r--          1     3149      sivdb.h
-rw-r--r--          1     10782     sivmgr.h
-rw-r--r--          1     2215      sivtext.h
-rw-r--r--          1     6471      xrefndx.h

./include/cis:
total 36
-rw-r--r--          1     1187      cem.h
-rw-r--r--          1     1499      cis_en.h
-rw-r--r--          1      661       cis_lan.h
-rw-r--r--          1     7253      cis_parms.h
-rw-r--r--          1      663       cislib.h
-rw-r--r--          1      889       lanmc.h
-rw-r--r--          1      502       scpinout.h
-rw-r--r--          1     1236      ssb_dmp.h

./isb_dmp:
total 194
-rw-r--r--          1      5801      dsp_snap.c
-rw-r--r--          1     30104     dsp_snap.o
-rw-r--r--          1     15393     isb_dmp.c
-rw-r--r--          1     1504      isb_dmp.mak
-rw-r--r--          1     43772     isb_dmp.o

./op:
total 12902
-rw-r--r--          2      1280      align.raw
-rwxr-xr-x          7    277132      atest*
-rwxr-xr-x          7     1947      cleanup.sh*
-rw-r--r--          2     1484      cnf.dfs
drwxr-xr-x          2      512       cnkdir/
-rwxr-xr-x          6    121428      csdspcd*
-rwxr-xr-x          2    122200      csen*
-rwxr-xr-x          6     86876      cslg*
-rwxr-xr-x          6    281980      csmctask*
-rwxr-xr-x          6    142300      csmdstat*
-rwxr-xr-x          6     85292      cstcts*
-rwxr-xr-x          6    136228      cswdisp*
-rwxr-xr-x          2    236552      datagen*
-rwxr-xr-x          2    129916      datarcv*

```

-rwxr-xr-x	2	218772	dataval*
drwxr-xr-x	2	512	dbgdir/
-rw-r--r--	7	762	ddx.dfs
-rwxr-xr-X	7	291264	debug*
-rw-r--r--	2	4477	debug.dat
-rw-r--r--	7	2228	debug.shm
-rwxr-xr-X	7	308124	dsp*
drwxr-xr-x	2	1536	dspdir/
-rw-r--r--	2	44	enhelp.txt
-rwxr-xr-X	7	325028	files*
-rw-r--r--	2	1187	files.dat
-rwxr-xr-X	7	1641	go.sh*
-rw-r--r--	2	1479	hdir.txt
-rw-r--r--	7	7117	hevt.txt
-rwxr-xr-X	7	135340	icpt*
-rw-r--r--	7	826	icpt.dat
-rwxr-xr-X	2	231348	isb_dmp*
-rwxr-xr-X	7	304	kill.sh*
-rw-r--r--	2	1443	mdspecs.dat
-rwxr-xr-X	7	245408	mdtask*
-rwxr-xr-X	6	64988	mskill*
-rw-r--r--	2	1787	nsshdr.raw
-rwxr-xr-X	7	168364	odtask*
-rw-r--r--	2	543	oneblock.raw
-rw-r--r--	2	544	oneword.raw
-rw-r--r--	1	38918	opdirs.dat
-rw-r--r--	2	21776	opdirs.siv
-rwxr-xr-X	7	179580	outbound*
-rwxr-xr-X	2	211052	rawgen*
drwxr-xr-x	9	512	riddir/
-rw-r--r--	2	256	rividsp.dat
-rwxr-xr-X	2	203468	rivshm*
-rwxr-xr-X	7	1707	rmshm.sh*
-rwxr-xr-X	7	228868	rpt*
drwxr-xr-X	2	512	rptdir/
drwxr-xr-X	2	512	shmdir/
-rw-r--r--	2	256	short.raw
-rwxr-xr-X	2	393468	sivmgr*
-rwxr-xr-X	7	2029	snapshot.sh*
-rw-r--r--	7	1693	ssw_ed.dat
-rw-r--r--	7	7954	sswdsp.dat
-rwxr-xr-X	7	261268	sswshm*
-rwxr-xr-X	6	143704	stfmain*
-rwxr-xr-X	6	167092	sysinit*
-rw-r--r--	3	15829	sysinit.ini
-rw-r--r--	2	16306	sysinit.rx
-rw-r--r--	3	15829	sysinit.sn
-rwxr-xr-X	7	208316	term*
-rw-r--r--	2	2896	term.dat
-rwxr-xr-X	7	132	term.sh*
-rwxr-xr-X	7	83968	termkbd*
-rwxr-xr-X	7	146832	termscrn*
-rw-r--r--	2	13267	tlm3204.raw
-rwxr-xr-X	7	114124	tmr*
drwxr-xr-X	2	512	tstcdir/
drwxr-xr-X	2	512	tstcnf/
drwxr-xr-X	2	512	tstdir/
drwxr-xr-X	2	512	tstrdir/
-rw-r--r--	7	472	tstrid/
-rwxr-xr-X	2	155580	updat.txt
			util*

./op/cnfdir:
total 28

-rw-r--r--	2	1940	acg.cnf
-rw-r--r--	2	2016	bvr.cnf
-rw-r--r--	3	1924	dgt.cnf
-rw-r--r--	2	1881	mpa.cnf
-rw-r--r--	2	1829	scp.cnf
-rw-r--r--	2	1692	test.cnf
-rw-r--r--	3	1990	ugc.cnf
 ./op/dbgdir:			
total 2			
-rw-r--r--	2	480	ridctl.ddx
 ./op/dspdir:			
total 356			
-rw-r--r--	7	3140	acolr.dsp
-rw-r--r--	7	1606	atest.dsp
-rw-r--r--	2	2941	cnf.dsp
-rw-r--r--	7	759	color.dsp
-rw-r--r--	7	942	dbg.dsp
-rw-r--r--	7	1149	ddx.dsp
-rw-r--r--	7	1212	ddxf.dsp
-rw-r--r--	7	1464	dsk.dsp
-rw-r--r--	7	1070	dsp0.dsp
-rw-r--r--	7	1613	dsp1.dsp
-rw-r--r--	7	3147	dsp2.dsp
-rw-r--r--	7	2630	dsp3.dsp
-rw-r--r--	7	648	dtest.dsp
-rw-r--r--	7	4504	ed.dsp
-rw-r--r--	7	1016	enlast.dsp
-rw-r--r--	7	1487	enoff.dsp
-rw-r--r--	7	958	error.dsp
-rw-r--r--	7	1238	file.dsp
-rw-r--r--	7	767	fncap.dsp
-rw-r--r--	7	738	full.dsp
-rw-r--r--	7	48220	grid.dsp
-rw-r--r--	7	682	half.dsp
-rw-r--r--	7	760	hdir.dsp
-rw-r--r--	7	806	hdis.dsp
-rw-r--r--	7	794	hevt.dsp
-rw-r--r--	7	1747	icpt1.dsp
-rw-r--r--	7	1108	icpt2.dsp
-rw-r--r--	7	2313	icpt3.dsp
-rw-r--r--	7	456	invld.dsp
-rw-r--r--	2	1157	isb.dsp
-rw-r--r--	7	3125	lmd.dsp
-rw-r--r--	7	905	md.dsp
-rw-r--r--	7	1113	midin.dsp
-rw-r--r--	7	1095	od1.dsp
-rw-r--r--	7	1050	od2.dsp
-rw-r--r--	7	1521	qdir.dsp
-rw-r--r--	7	246	qdis.dsp
-rw-r--r--	2	5745	rid.dsp
-rw-r--r--	7	5249	rpt.dsp
-rw-r--r--	7	1615	rpt0.dsp
-rw-r--r--	7	1416	shm.dsp
-rw-r--r--	2	4275	sivsts.dsp
-rw-r--r--	7	696	somds.dsp
-rw-r--r--	7	717	somfn.dsp
-rw-r--r--	7	691	somod.dsp
-rw-r--r--	2	7836	strm.dsp
-rw-r--r--	7	4226	sts_link.dsp
-rw-r--r--	7	5841	sts_top.dsp
-rw-r--r--	7	1536	test1.dsp
-rw-r--r--	7	959	test2.dsp

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-rw-r--r--	7	935	test_pie.dsp
-rw-r--r--	7	780	testmsg.dsp
-rw-r--r--	7	1536	testnew.dsp
-rw-r--r--	7	1212	testpoly.dsp
-rw-r--r--	7	764	testrpt.dsp
-rw-r--r--	7	2070	time.dsp
-rw-r--r--	7	1301	tmr.dsp
-rw-r--r--	7	1021	txt.dsp
-rw-r--r--	7	756	updat.dsp

./op/riddir:

total 16

drwxr-xr-x	2	512	acg/
drwxr-xr-x	2	1536	bvr/
drwxr-xr-x	2	512	dgt/
drwxr-xr-x	2	512	mpa/
drwxr-xr-x	2	512	scp/
drwxr-xr-x	2	512	test/
drwxr-xr-x	2	512	ugc/

./op/riddir/acg:

total 60

-rw-r--r--	2	3787	acgsd.rid
-rw-r--r--	2	10083	bvrsg103.rid
-rw-r--r--	2	10140	bvrsg10n.rid
-rw-r--r--	2	1231	ccnacg.rid
-rw-r--r--	2	975	cmcacg01.rid
-rw-r--r--	2	2155	cmcacg10.rid

./op/riddir/bvr:

total 306

-rw-r--r--	2	9939	bvracg.rid
-rw-r--r--	2	3554	bvrugc71.rid
-rw-r--r--	2	3554	bvrugc72.rid
-rw-r--r--	2	3554	bvrugc73.rid
-rw-r--r--	2	3554	bvrugc74.rid
-rw-r--r--	2	3554	bvrugc75.rid
-rw-r--r--	2	3554	bvrugc76.rid
-rw-r--r--	2	3554	bvrugc77.rid
-rw-r--r--	2	3554	bvrugc78.rid
-rw-r--r--	2	3554	bvrugc79.rid
-rw-r--r--	2	3554	bvrugc80.rid
-rw-r--r--	2	3554	bvrugc81.rid
-rw-r--r--	2	3554	bvrugc82.rid
-rw-r--r--	2	3554	bvrugc83.rid
-rw-r--r--	2	3554	bvrugc84.rid
-rw-r--r--	2	3554	bvrugc85.rid
-rw-r--r--	2	1976	ccnbvr.rid
-rw-r--r--	2	968	cmcbvr01.rid
-rw-r--r--	2	1040	lmcbvr01.rid
-rw-r--r--	2	2241	ugcseg04.rid
-rw-r--r--	2	2107	ugcseg05.rid
-rw-r--r--	2	2081	ugcseg06.rid
-rw-r--r--	2	2081	ugcseg07.rid
-rw-r--r--	2	2080	ugcseg08.rid
-rw-r--r--	2	2087	ugcseg09.rid
-rw-r--r--	2	2087	ugcseg10.rid
-rw-r--r--	2	2087	ugcseg11.rid
-rw-r--r--	2	2081	ugcseg12.rid
-rw-r--r--	2	2081	ugcseg13.rid
-rw-r--r--	2	2087	ugcseg14.rid
-rw-r--r--	2	2081	ugcseg15.rid
-rw-r--r--	2	2087	ugcseg16.rid
-rw-r--r--	2	2087	ugcseg17.rid

-rw-r--r--	2	2087	ugcseg18.rid
-rw-r--r--	2	2087	ugcseg19.rid
-rw-r--r--	2	2082	ugcseg20.rid
-rw-r--r--	2	2082	ugcseg21.rid
-rw-r--r--	2	2082	ugcseg22.rid
-rw-r--r--	2	2082	ugcseg23.rid
-rw-r--r--	2	2088	ugcseg24.rid
-rw-r--r--	2	2088	ugcseg25.rid
-rw-r--r--	2	2088	ugcseg26.rid
-rw-r--r--	2	2088	ugcseg27.rid
-rw-r--r--	2	2081	ugcseg28.rid
-rw-r--r--	2	2081	ugcseg29.rid

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./op/riddir/dgt:

total 312			
-rw-r--r--	3	3628	ccndgt.rid
-rw-r--r--	3	974	cmcseg01.rid
-rw-r--r--	3	3515	cmcseg90.rid
-rw-r--r--	3	20368	dgtnt_p.rid
-rw-r--r--	3	3741	dgtsd.rid
-rw-r--r--	2	1458	dgtseg01.rid
-rw-r--r--	2	6539	dgtseg02.rid
-rw-r--r--	2	4903	dgtseg03.rid
-rw-r--r--	2	7550	dgtseg04.rid
-rw-r--r--	2	6693	dgtseg05.rid
-rw-r--r--	2	13956	dgtseg06.rid
-rw-r--r--	2	17942	dgtseg07.rid
-rw-r--r--	2	7020	dgtseg08.rid
-rw-r--r--	2	12226	dgtseg09.rid
-rw-r--r--	2	18886	dgtseg80.rid
-rw-r--r--	3	974	lmcseg01.rid
-rw-r--r--	3	9682	lmcseg11.rid
-rw-r--r--	3	2920	lmcsegn0.rid
-rw-r--r--	3	9826	lmcsegn.rid

./op/riddir/mpa:

total 10			
-rw-r--r--	2	1040	ccnmpa.rid
-rw-r--r--	2	2165	ise.rid

./op/riddir/scp:

total 14			
-rw-r--r--	2	1671	ccnscp.rid
-rw-r--r--	2	4527	gcfroute.rid

./op/riddir/test:

total 46			
-rw-r--r--	2	1846	constant.rid
-rw-r--r-	2	2525	raw.rid
-rw-r--r--	2	2643	rawshort.rid
-rw-r--r--	2	9001	tbfsyy4.rid
-rw-r--r--	2	835	testseg1.rid
-rw-r--r--	2	835	testseg2.rid
-rw-r--r--	2	835	testseg3.rid
-rw-r--r--	2	835	testseg4.rid
-rw-r--r--	2	835	testseg5.rid
-rw-r--r--	2	835	testseg6.rid

./op/riddir/ugc:

total 120			
-rw-r--r--	3	3554	bvrseg71.rid
-rw-r--r--	3	3120	bvrseg72.rid
-rw-r--r--	3	3113	bvrseg73.rid
-rw-r--r--	3	3120	bvrseg74.rid
-rw-r--r--	3	3121	bvrseg75.rid
-rw-r--r--	3	3120	bvrseg76.rid
-rw-r--r--	3	3120	bvrseg77.rid
-rw-r--r--	3	3120	bvrseg78.rid
-rw-r--r--	3	3120	bvrseg79.rid
-rw-r--r--	3	3125	bvrseg80.rid
-rw-r--r--	3	3127	bvrseg81.rid
-rw-r--r--	3	3129	bvrseg82.rid
-rw-r--r--	3	3128	bvrseg83.rid
-rw-r--r--	3	3128	bvrseg84.rid
-rw-r--r--	3	3129	bvrseg85.rid

./op/rptdir:

```

total 0

./op/shmdir:
total 24
-rw-r--r--          2           11318      riv.shm

./op/tstcdir:
total 4
-rw-r--r--          3           1924       dgt.cnf

./op/tstcnf:
total 4
-rw-r--r--          3           1990       ugc.cnf

./op/tstdir:
total 188
-rw-r--r--          2           66861      bconsen.tst
-rw-r--r--          2           2012       config.tst
-rw-r--r--          2           944        mpalmp.tst
-rw-r--r--          2           3038       raw.tst
-rw-r--r--          2           2541       rid.tst
-rw-r--r--          2           9864      siv_at.tst
-rw-r--r--          2           3345       streams.tst
-rw-r--r--          2           5064       validate.tst

./op/tstrdir:
total 114
-rw-r--r--          3           3628      ccndgt.rid
-rw-r--r--          3           974        cmcseg01.rid
-rw-r--r--          3           3515      cmcseg90.rid
-rw-r--r--          3           20368     dgnrt_p.rid
-rw-r--r--          3           3741      dgtsd.rid
-rw-r--r--          3           974        lmcseg01.rid
-rw-r--r--          3           9682      lmcseg11.rid
-rw-r--r--          3           2920      lmcsegn0.rid
-rw-r--r--          3           9826      lmcsegn.rid

./op/tstrid:
total 120
-rw-r--r--          3           3554      bvrseg71.rid
-rw-r--r--          3           3120      bvrseg72.rid
-rw-r--r--          3           3113      bvrseg73.rid
-rw-r--r--          3           3120      bvrseg74.rid
-rw-r--r--          3           3121      bvrseg75.rid
-rw-r--r--          3           3120      bvrseg76.rid
-rw-r--r--          3           3120      bvrseg77.rid
-rw-r--r--          3           3120      bvrseg78.rid
-rw-r--r--          3           3120      bvrseg79.rid
-rw-r--r--          3           3125      bvrseg80.rid
-rw-r--r--          3           3127      bvrseg81.rid
-rw-r--r--          3           3129      bvrseg82.rid
-rw-r--r--          3           3128      bvrseg83.rid
-rw-r--r--          3           3128      bvrseg84.rid
-rw-r--r--          3           3129      bvrseg85.rid

./rawgen:
total 148
-rw-r--r--          1           14370     rawgen.c
-rw-r--r--          1           1211      rawgen.mak
-rw-r--r--          1           36096     rawgen.o
-rw-r--r--          1           3240      rawvar.c
-rw-r--r--          1           16700     rawvar.o

./rivlib:

```

total 1102			
-rw-r--r--	1	6486	buf_dsp.c
-rw-r--r--	1	2379	buf_dump.c
-rw-r--r--	1	2486	gen_init.c
-rw-r--r--	1	3529	get_ddt.c
-rw-r--r--	1	323928	libriv.a
-rw-r--r--	1	4805	ostime.c
-rw-r--r--	1	4149	progid.c
-rw-r--r--	1	2776	relhtbs.c
-rw-r--r--	1	9682	retime.c
-rw-r--r--	1	23884	ridshm.c
-rw-r--r--	1	9466	riv_bs.c
-rw-r--r--	1	3618	rivlib.mak
-rw-r--r--	1	2028	rivset.c
-rw-r--r--	1	35509	sivfld.c
-rw-r--r--	1	8742	sivlkup.c
-rw-r--r--	1	46324	sivrd.c
-rw-r--r--	1	2534	sndrwmsg.c
-rw-r--r--	1	2823	strltws.c
-rw-r--r--	1	4097	strrpl.c
-rw-r--r--	1	27157	svcq.c
-rw-r--r--	1	15227	xrefndx.c
 ./rivshm:			
total 174			
-rw-r--r--	1	2567	rivshm.c
-rw-r--r--	1	2161	rivshm.mak
-rw-r--r--	1	25057	rivshm.tmp
-rw-r--r--	1	28072	rivshm_t.c
-rw-r--r--	1	19532	rivshm_t.o
-rw-r--r--	1	1741	rivshm_v.c
-rw-r--r--	1	1684	rivshm_v.o
-rw-r--r--	1	2046	rivshmrx.mak
-rw-r--r--	1	1841	rivshmsn.mak
 ./sivmgr:			
total 866			
-rw-r--r--	1	35770	mgrfat.c
-rw-r--r--	1	55312	mgrfat.o
-rw-r--r--	1	126756	mgrodr.c
-rw-r--r--	1	123452	mgrodr.o
-rw-r--r--	1	21556	sivmgr.c
-rw-r--r--	1	1130	sivmgr.err
-rw-r--r--	1	1517	sivmgr.mak
-rw-r--r--	1	45884	sivmgr.o
 ./util:			
total 566			
-rw-r--r--	1	3409	tstfir.c
-rw-r--r--	1	15604	tstfir.o
-rw-r--r--	1	3015	tstirt.c
-rw-r--r--	1	14340	tstirt.o
-rw-r--r--	1	4214	tstldp.c
-rw-r--r--	1	14716	tstldp.o
-rw-r--r--	1	10731	tstmed.c
-rw-r--r--	1	19204	tstmed.o
-rw-r--r--	1	8588	tstrcv.c
-rw-r--r--	1	24264	tstrcv.o
-rw-r--r--	1	3669	tstrtn.c
-rw-r--r--	1	15964	tstrtn.o
-rw-r--r--	1	3126	tstxmsg.c
-rw-r--r--	1	15024	tstxmsg.o
-rw-r--r--	1	1695	tstxmt.c
-rw-r--r--	1	5288	tstxmt.o

-rw-r--r--	1	32797	util.c
-rw-r--r--	1	734	util.mak
-rw-r--r--	1	55744	util.o
-rw-r--r--	1	4504	wrtlog.c
-rw-r--r--	1	20640	wrtlog.o